

GENERAL

Fiberglass Conduit Specifications for Use Below Ground

The conduit shall be fiberglass conduit, also known as Reinforced Thermosetting Resin Conduit (RTRC), manufactured using the single circuit filament winding process. Multi circuit windings are not allowed. The conduit shall have a winding angle as close as possible to 54.75 degrees.

The resin system shall be epoxy based, with no fillers, using an anhydride curing agent. The fiberglass shall consist of continuous E-glass roving. The conduit shall not contain any halogen compounds containing chlorine, bromine, fluorine and iodine in more than trace amounts when burning.

Conduit and elbows shall be manufactured from the same resin/hardener/glass systems manufactured by the same filament wound system.

Fiberglass conduit fittings and accessories shall be manufactured using one of two manufacturing procedures. The first method shall use the same process, methods, and components as used to manufacture the fiberglass conduit. The second method shall use the compression molding process, Sheet Molding Compound (SMC), for the manufacture of the finished component. The SMC material shall be a vinyl ester resin with +30% reinforcement of glass. The glass fibers should be approximately 1" in length. The SMC material shall be fire resistant to UL 2515.

Conduit shall be integral bell and spigot or bonded coupling and spigot.

Conduit, elbows and fittings are specified for use throughout a temperature range of -60°F (-51°C) to 250°F (121°C).

Manufacturer shall have a current Certificate of Compliance, issued by an independent and accredited company, with an ISO 9001:2008 Quality Management System.

ELECTRICAL PROPERTIES

• Volume Resistivity	3.8 x 10 ¹⁴ ohm-cm	ASTM D 257
• Surface Resistivity	1.1 x 10 ¹⁴ ohms	ASTM D 257
• Dielectric Constant	3.5 (at 10 ³ cps)	ASTM D 150
• Dissipation Factor	0.005 (at 10 ³ cps)	ASTM D 150
• Dielectric Strength	500 volts/mil. (19.7 kv/mm)	ASTM D 149

PHYSICAL AND MECHANICAL PROPERTIES

• Tensile Strength (Axial)	11,000 psi (76 MPa)	ASTM D 2105
• Compressive Strength (Axial)	12,000 psi (83 MPa)	ASTM D 695
• Ultimate Elongation	2% psi (9.6 GPa)	ASTM D 2105
• Modulus of Elasticity (4" conduit)	1.4 X 10 ⁺⁶ psi (9.6 GPa)	ASTM D 2105
• Thermal Conductivity	2.0 BTU/(ft ²)(hr.)(°F/in) (0.3mk)	ASTM D 5930-01
• Specific Gravity	1.9	ASTM D 792
• Glass Content	70% ± 5%	API SPEC 15 LR